

## First record of *Podarcis erhardii* (Bedriaga, 1886) from Paros Island (Cyclades), Greece (Squamata: Lacertidae)

Apostolos Christopoulos<sup>1,\*</sup>

The lacertid genus *Podarcis* contains approx. 20 species in the Mediterranean region (Harris, 1999; Harris et al., 2002; Lymberakis et al., 2008). The Aegean wall lizard (*P. erhardii*) is a highly diversified lacertid lizard species endemic to the Balkans, ranging from southern Bulgaria and the extreme south of Serbia, Republic of Macedonia, and Albania into much of Greece and the Aegean archipelago, with the exception of parts of Epirus and the Peloponnese (Chondropoulos, 1986; Chondropoulos and Chiras, 1997; Valakos et al., 1999; Dimitropoulos and Ioannidis, 2002; Petrov, 2004; Petrov et al., 2006; Biserkov, 2007; Valakos et al., 2008; Jablonski, 2011; Tomovic et al., 2014; Uhrin et al., 2016). The species' range is characterized by a discontinuous mainland distribution and by the existence of many island populations, which have been differentiated into 21 subspecies, most of which (18) are found on the islands of the southern Aegean Sea (Chondropoulos, 1986; Poulakakis et al., 2003; Valakos et al., 2008; Hurston et al., 2009).

On the Aegean Islands the species is absent from the Milos Group (Milos, Kimolos, and Antimilos), where *P. milensis* is found; from the Skyros-Piperi Island complex, where *P. gageae* occurs; and from almost all of the islands of the eastern Aegean (Limnos, Lesbos, Chios through Rhodes and Kastellorizo) where *Ophisops elegans* occurs (Dimitropoulos and Ioannidis, 2002; Valakos et al., 2008). It is also absent from Crete and the islets of Antikythera where two recently recognized species, *P. cretensis* and *P. levendis*, occur (Lymberakis et al., 2008). Within its nearly continuous western Aegean distribution, the species is very widely distributed, occurring on even the smaller islands, and

it is ubiquitous in all habitats, with the exception of closed-canopy forest. As such, the apparent absence of *P. erhardii* from the central cycladic island of Paros is particularly noteworthy, especially because the species does occur on the surrounding satellite islets (Gruber and Fuchs, 1977; Dimitropoulos and Ioannidis, 2002; Valakos et al., 2008).

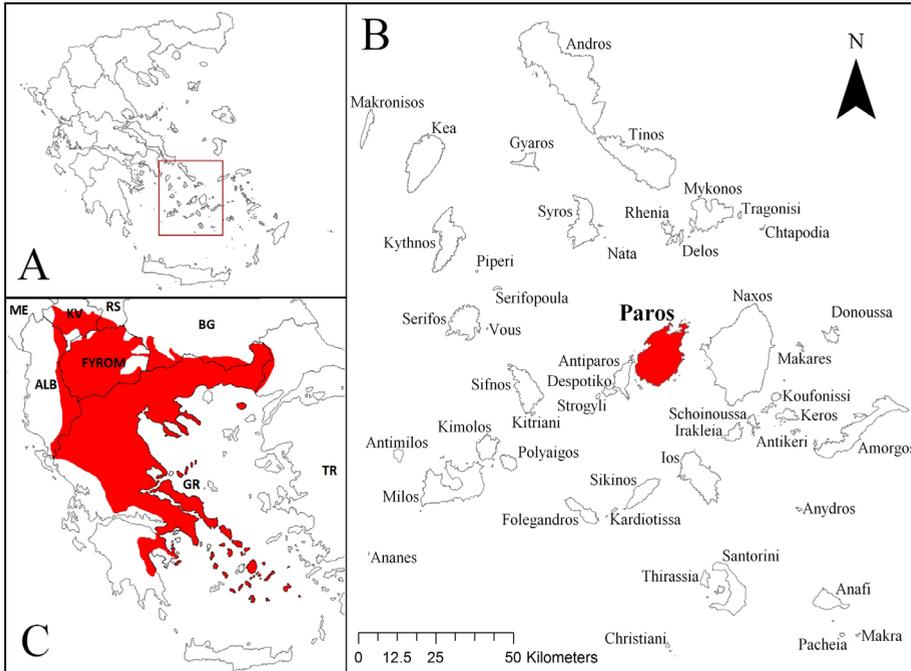
Paros is the third-largest island (196.3 km<sup>2</sup>) of the Cyclades Group and its highest elevation is 771 m (Stamatelatos and Vamva, 1996; National Statistical Service of Greece, 2001). The island is located immediately to the west of Naxos, from which it is separated by an 8-km-wide channel; it is surrounded by more than 25 uninhabited satellite islets. The island is also characterized by a diversity of arid habitats, as well as an extensive network of dry-stone walls, which have been shown to provide important refugia for *P. erhardii*.

During the period of 9–15 June 2017 I visited the island to observe reptiles and birds and for agro-ecological observations. On 14 June 2017 at approximately 0845 h, during a visit to a traditional agricultural area near the settlement of Protoria (ca. 2.5 km SW of the village of Naoussa; 37.1108°N, 25.2126°E; elevation 67 m), I observed one adult *P. erhardii* resting on a dry-stone wall. I photographed the animal and searched for others. Further searching resulted in the observation of a second individual, ca. 70 m from the first, also on a dry-stone wall. Later in the morning, a third animal was observed below *Juniperus phoenicea* and *Pistacia lentiscus* shrubs, near Agios Andreas Monastery, ca. 300 m distant from the first observations.

The animals were identified by the combination of body size, coloration, and habitus; in all of those aspects the observed individuals resembled Aegean Wall lizards from nearby islands. Species identification was confirmed by P. Lymberakis (Museum of Natural History, Crete) and J. Foufopoulos (University of Michigan) and a voucher photograph (Fig. 2A) was

<sup>1</sup> Lianokladi, Fthiotida, 35100, Greece.

\* Corresponding author. E-mail: lianusapo@yahoo.gr



**Figure 1.** (A) Map of Greece showing the location of the Cyclades Group (South Aegean). (B) Islands in the Cyclades Group, with the location of Paros Island indicated in red. (C) Approximate geographic distribution of the Aegean wall lizard, *Podarcis erhardii* (red area).



**Figure 2.** (A) The first Aegean wall lizard, *Podarcis erhardii*, photographed in situ on Paros Island, Greece (photo NHMC 80.3.51.777). (B) The place of discovery, a dry-stone wall where the adult lizard was resting. (C) The traditional agricultural landscape surrounding the habitat of *P. erhardii*, near the settlement of Protoria. Photos by the author.

deposited at the Natural History Museum of Crete, Heraklion, Crete, Greece (NHMC 80.3.51.777).

The area where the three wall lizards were found is a habitat mosaic, consisting of cereal fields, olive trees, sclerophyllous scrub, garrigue (phrygana), and various built-up elements including terraces, dry-stone walls, and old farmhouses. In the same area I also observed Kotschy's gecko, *Mediodactylus kotschyi*, and Rough-tail agama, *Stellagama stellio*.

Extensive searches for the species in other parts of Paros both by myself and other researchers has produced no additional sightings, suggesting that the distribution of the species on the island is very restricted. In fact, Gruber and Fuchs (1977) made special mention of the peculiar distribution pattern of the species in the Paros Archipelago and its absence from Paros Island, and they produced some hypotheses explaining this absence.

This is the first documented observation of *P. erhardii* on Paros following ca. 150 years of herpetological searches. It fills a previously unexplained distributional gap for the species. This record is important for the biogeography of the species and the herpetological knowledge of the island. Further research is needed to identify the phylogenetic affiliations of the Paros population.

**Acknowledgements.** I thank Johannes Foufopoulos for the confirmation of the species identity, his interest, and for valuable help during manuscript preparation, as well as for reviewing and correcting the current version. I also thank Petros Lymberakis for the initial species confirmation, Iniochos Christopoulos for preparing the map, and Apostolos Petrikis for his invitation and hospitality on the island.

## References

- Biserkov, V. (Ed.) (2007): A Field Guide to Amphibians and Reptiles of Bulgaria. Sofia, Bulgaria, Green Balkans. 196 pp.
- Chondropoulos, B.P. (1986): A checklist of the Greek reptiles. I. The lizards. *Amphibia-Reptilia* **7** (3): 217–235.
- Chondropoulos, B.P., Chiras, G. (1997): Geographic Distribution. *Podarcis erhardii livadiaca*. *Herpetological Review* **28** (2): 97.
- Dimitropoulos, A., Ioannidis, Y. (2002): Reptiles of Greece and Cyprus. Kifissia, Greece, Goulandris Natural History Museum. 275 pp.
- Gruber, U., Fuchs, D. (1977): Die Herpetofauna des Paros-Archipels (Zentral-Ägäis). *Salamandra* **13** (2): 60–77.
- Harris, D.J. (1999): Molecular systematics and evolution of lacertid lizards. *Natura Croatica* **8** (3): 161–180.
- Harris, D.J., Batista, V., Carretero, M.A., Pinho, C., Sá-Sousa, P. (2002): Mitochondrial DNA sequence data confirms the presence of *Podarcis carbonelli* (Pérez-Mellado, 1981) in southern Spain. *Herpetozoa* **15** (3/4): 188–190.
- Hurston, H., Voith, L., Bonanno, J., Foufopoulos, J., Pafilis, P., Valakos, E., Anthony, N. (2009): Effects of fragmentation on genetic diversity in island populations of the Aegean wall lizard *Podarcis erhardii* (Lacertidae, Reptilia). *Molecular Phylogenetics and Evolution* **52** (2): 395–405.
- Jablonski, D. (2011): Reptiles and amphibians of Albania with new records and notes on occurrence and distribution. *Acta Societatis Zoologicae Bohemicae* **75**: 223–238.
- Lymberakis, P., Poulakakis, N., Kaliontzopoulou, A., Valakos E., Mylonas, M. (2008): Two new species of *Podarcis* (Squamata: Lacertidae) from Greece. *Systematics and Biodiversity* **6** (3): 307–318.
- National Statistical Service of Greece (2001): Population and housing census 2001 (incl. area and average elevation). Available at: [http://dlib.statistics.gr/Book/GRESYE\\_02\\_0101\\_00098%20.pdf](http://dlib.statistics.gr/Book/GRESYE_02_0101_00098%20.pdf). Accessed on 04 August 2017.
- Petrov, B. (2004): The herpetofauna (Amphibia and Reptilia) of the Eastern Rhodopes (Bulgaria and Greece). In: *Biodiversity of Bulgaria. 2. Biodiversity of Eastern Rhodopes (Bulgaria and Greece)*, p. 863–879. Beron, P., Popov, A., Eds., Sofia, Bulgaria, Pensoft & National Museum of Natural History.
- Petrov, B.P., Tzankov, N., Strijbosch, H., Popgeorgiev, G., Beshkov, V. (2006): The herpetofauna (Amphibia and Reptilia) of the Western Rhodopes mountain (Bulgaria and Greece). In: *Biodiversity of Bulgaria. 3. Biodiversity of Western Rhodopes (Bulgaria and Greece)*, p. 863–912. Beron, P., Ed., Sofia, Bulgaria, Pensoft & National Museum of Natural History.
- Poulakakis, N., Lymberakis, P., Antoniou, A., Chalkia, D., Zouros, E., Mylonas M., Valakos, E. (2003): Molecular phylogeny and biogeography of the wall-lizard *Podarcis erhardii* (Squamata: Lacertidae). *Molecular Phylogenetics and Evolution* **28** (1): 38–46.
- Stamatelatos, M., Vamva, F. (1996): *Hellenic Geographical Encyclopedia. Volume III. Athens, Greece, Tegopoulou – Maniatea*. 428 pp.
- Tomovic, L., Ajtic, R., Ljubisavljevic, K., Urosevic, A., Jovic, D., Krizmanic, I., Labus, N., Dordevic, S., Kalezic, L.M., Vukov, T., Dzukic, G. (2014): Reptiles in Serbia – distribution and diversity patterns. *Bulletin of the Natural History Museum in Belgrade* **7**: 129–158.
- Uhrin, M., Havas, P., Minarik, M., Kodejs, K., Bugos, I., Danko, S., Husak, T., Koleska, D., Jablonski, D. (2016): Distribution updates to amphibian and reptile fauna for the Republic of Macedonia. *Herpetology Notes* **9**: 201–220.
- Valakos, E.D., Maragou, P., Mylonas, M. (1999): Geographic distribution. *Podarcis erhardii*. *Herpetological Review* **30** (1): 52–53.
- Valakos, E.D., Pafilis, P., Sotiropoulos, K., Lymberakis, P., Maragou, P., Foufopoulos, J. (2008): The Amphibians and Reptiles of Greece. Frankfurt am Main, Germany, Chimaira. 463 pp.